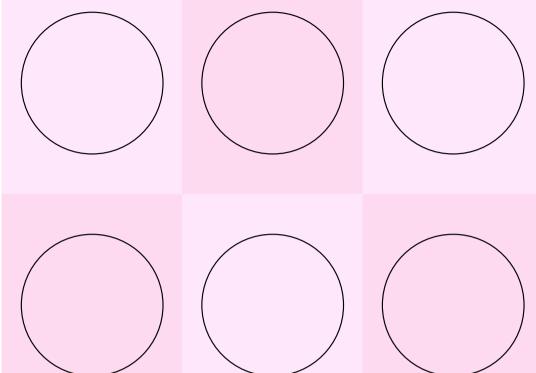
Jono and Ben's School Holiday Programme

The world's Word Find	Hardest		
JOIN IN THE FUN ADULTS, THIS WORDS CAN RUN UP, DOWN, FO BACKWARDS & DIAGONALLY BI STRAIGHT LINE. JUST DON'T AS ANSWERS, WE'VE HAD TO GOO WORDS MEAN! YOU'RE WELCO	ORWARDS, UT AWAYS IN A SK US FOR THE DGLE WHAT THE		
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G A P G O S I N B B K B I U O U A I E R J B S E W R Z C U K J H X N O J R P R W	T Z K P I D W I H S R E T S P F W Y E I W V L J W C N T	VOTEGK SECROW VEWMBG FLLGBW	
OUTDYHOAEW NPORQWLTIA WJJELAVAAW MNBASDGVSM SHXVHUYKJH	UEPBUTN UEPWQRS UDDGIZTD UQZGISOU	A Q B X E G S M O F D V O N H W E G J Q O Q G U	
C F O Z S F A V I P L M H V Z U V N J T WORCESTERSHIRE NAUSEOUS MINUSCULE	SACRILEGIOUS (GOBBLEDEGOOK (MIOOO IQVKY ONOMATOPOEIA ORANGUTAN CHIAROSCURIST	Circle Fun PIZZAS, STEERING WHEELS, DO CIRCLES! GRAB YOUR COLOURI
OTORHINOLARYNGOLOGIST		LOGORRHEA	ARE MADE WITH CIRCLES USING



PIZZAS, STEERING WHEELS, DONUTS AND THE SUN ALL HAVE SOMETHING IN COMMON, THEY ARE CIRCLES! GRAB YOUR COLOURING PENS AND HAVE A GO AT THINKING OF OTHER THINGS THAT ARE MADE WITH CIRCLES USING THE TEMPLATE ABOVE. PRINT THE TEMPLATE OUT, OR CREATE YOUR OWN CIRCLES ON A PIECE OF PAPER AND HAVE A GO. LET YOUR IMAGINATION RUN WILD!

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Measure how far your plane can fly. Does it fly further indoors or outdoors - why do you think that is?

The amount that you stretch the elastic band determines the amount of energy your plane will have. What happens to the way that your plane flies if you pull the elastic band a lot or a small amount?

You added weight to the front of your plane to help it to fly. What happens if you change or move this weight from the front to the back or sides of the plane?

Does the size of your plane affect how it flies? Try cutting a different sized triangle of card and measure the distance it can fly. Why do you think the distance changed?

Does your plane need to be a triangle shape? Investigate card planes that are squares or circles and see how both the flight of the plane in the air changes as well as the distance it can cover.

SUPER POWER: Thrust! CATAPULT PLANE LAB NOTES...

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TO MAKE YOUR CATAPULT PLANE ...

- 1. Watch the video of Nanogirl making her catapult plane!
- 2. On a piece of paper, measure and cut out a 16x8 cm rectangle
- 3. Fold the rectangle in half lengthways twice to make it narrower.
- Fold the rectangle over 3cm in from one end of the rectangle, folding the paper all the way over to make a 'hook'.
- 5. Put the paper 'hook' through the elastic band, then tape the folded end down to trap the band in the hook.

Why not set up a game where you make paper skittles by rolling strips of paper into a tube and lining them up on a table. You can give each skittle a point value and challenge your friends or family to a game to see who can score the most points by knocking the skittles over with their plane!

- Draw and cut out a 12cm equilateral triangle on the card that's a triangle that's 12cm long
- on each of its three sides.
 7. With the elastic band and hook at one of the points (your plane's nose), align the folded rectangle down the centre of the card triangle, so you have two evenlysized wings, one on each side of
- Attach the paperclip/Blu-Tac/ plasticine on the nose of the plane (the corner of card by the elastic band) to add some extra weight.

the rectangle. Secure with tape.

 Hook the elastic band around the tip of one of your thumbs and pull the folded paper back with the other hand (the elastic band is extended in front of the plane). Let go of the paper and the plane should fly forward!

YOU WILL NEED Scissors Tape Paper clip or blu-tack/plasticine Paper clip or blu-tack/plasticine Large elastic band or stretchy hair elastic Thin card (e.g. cereal box card) Plain paper Ruler Optional) Colouring and decorating supplies

Thrust is the force that helps planes to fly forwards.

Airplanes create thrust by moving air through their engines. When a plane is in the air, the forward force of thrust acts against another force called 'drag', which works to slow the plane down. In this experiment, when you pulled back the plane you stretched out the elastic band. This creates a build-up of stored energy known as potential energy.

When you let it go, the energy was converted to kinetic energy or moving energy, which helped the paper plane to thrust forwards through the air.

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